

FIG.1

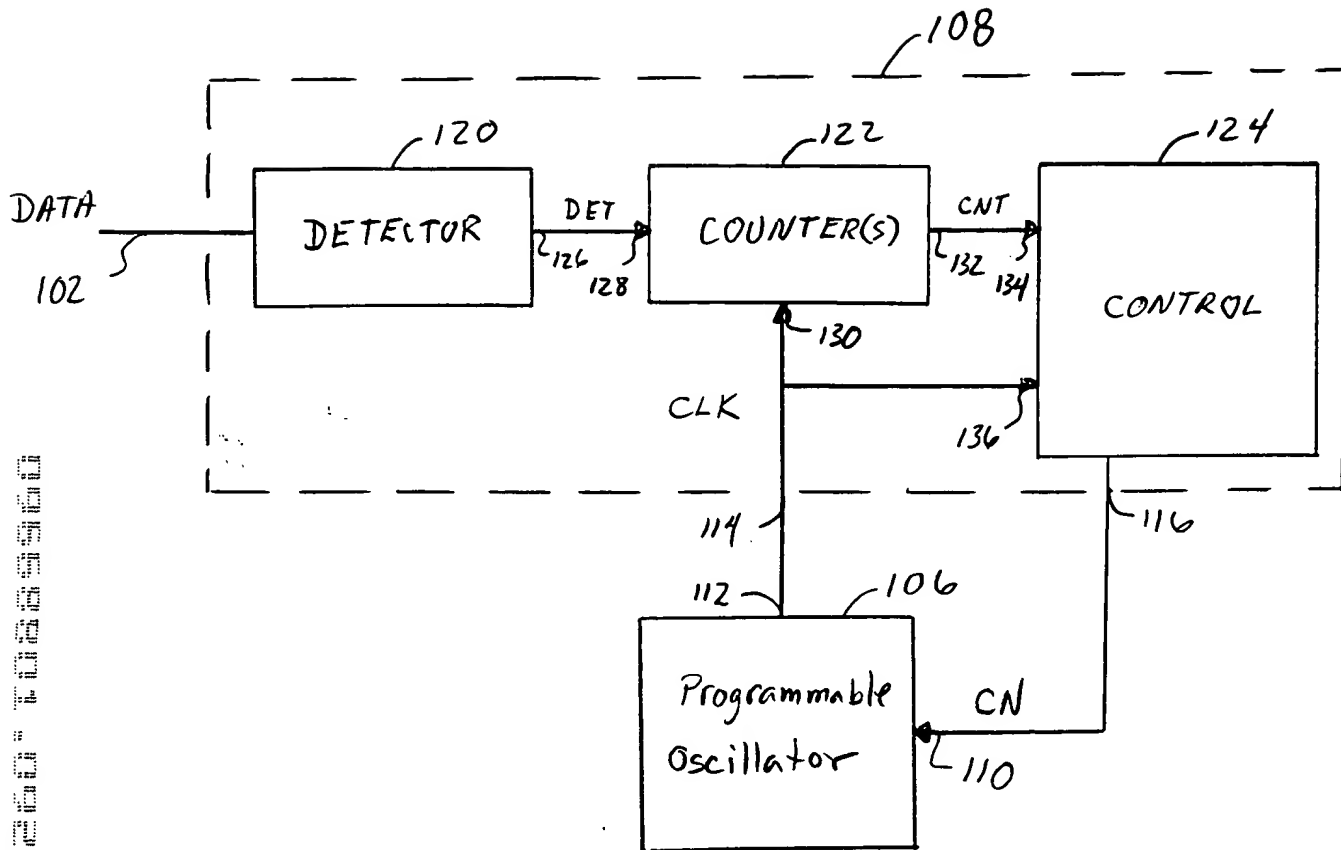


FIG.2

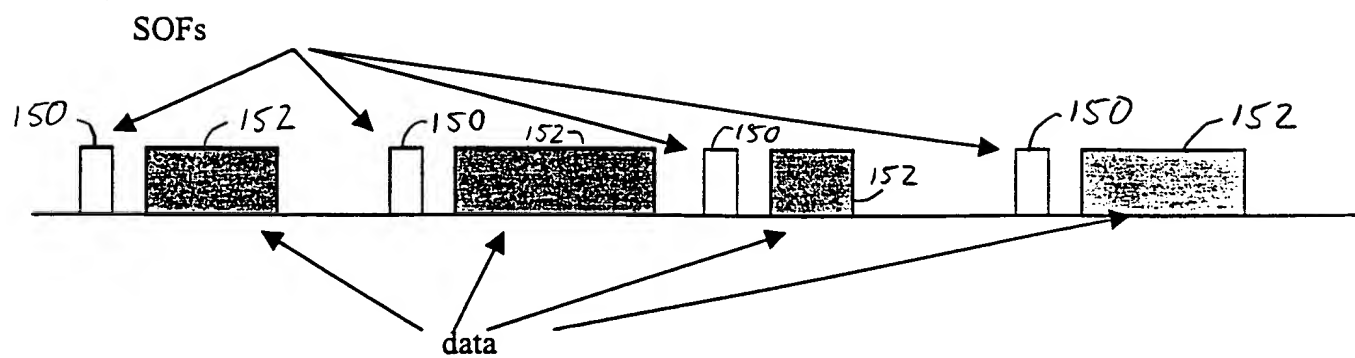


FIG.3

The timing diagram shows a sequence of bits from 0 to 33. A horizontal arrow above the bits indicates a duration of 200 units. An upward-pointing arrow labeled "SOF Packet Recognizable here" points to bit 14.

| Bit Number | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
|------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| D+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No NRZI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NRZI Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Field boundaries are indicated by vertical dashed lines:

- Sync:** Bits 0-7 (D+, D-) and bits 0-7 (No NRZI).
- SOF 0101:** Bits 8-13 (D+, D-) and bits 8-13 (No NRZI).
- Frame Number (11):** Bits 15-25 (D+, D-) and bits 15-25 (No NRZI).
- CRC5:** Bits 26-30 (D+, D-) and bits 26-30 (No NRZI).
- EOP:** Bits 31-33 (D+, D-) and bits 31-33 (No NRZI).

A dashed arrow labeled "Possible Bit Stuffs" points from the end of the Frame Number field towards the EOP field.

FIG.4

| Jitter Errors | |
|---------------|--------|
| SOF Detect | 175 ns |
| Osc. Jitter | 3 ns |
| Frame Error | 90 ns |

Synchronization uncertainty
Host error beyond +/-0.05% accuracy

Initial Error

| Frame Time (us) | | Includes Osc Jitter | | Cik: 24 MHz | | CikMinRange | | CikMaxRange | |
|-------------------|--------------|---------------------|----------|-------------|-----------|-------------|--------|-------------|--------|
| Initial Clock Err | Nominal Time | Min Time | Max Time | Min Count | Max Count | | | | |
| 0.00% | 1000000 | 999732 | 1000268 | 23993 | 24007 | 23.986 | 24.000 | 24.000 | 24.014 |
| 0.10% | 1000000 | 999732 | 1000268 | 23969 | 24031 | 23.962 | 23.976 | 24.024 | 24.038 |
| 0.20% | 1000000 | 999732 | 1000268 | 23945 | 24055 | 23.938 | 23.952 | 24.048 | 24.062 |
| 0.40% | 1000000 | 999732 | 1000268 | 23897 | 24103 | 23.890 | 23.904 | 24.096 | 24.110 |
| 0.60% | 1000000 | 999732 | 1000268 | 23849 | 24151 | 23.842 | 23.856 | 24.144 | 24.158 |
| 0.80% | 1000000 | 999732 | 1000268 | 23801 | 24199 | 23.794 | 23.808 | 24.192 | 24.206 |
| | | | | | | | | | |
| 1.00% | 1000000 | 999732 | 1000268 | 23753 | 24247 | 23.746 | 23.760 | 24.240 | 24.255 |
| 2.00% | 1000000 | 999732 | 1000268 | 23513 | 24487 | 23.506 | 23.520 | 24.479 | 24.495 |
| 3.00% | 1000000 | 999732 | 1000268 | 23273 | 24727 | 23.266 | 23.280 | 24.719 | 24.735 |
| 4.00% | 1000000 | 999732 | 1000268 | 23033 | 24967 | 23.026 | 23.040 | 24.959 | 24.975 |
| 5.00% | 1000000 | 999732 | 1000268 | 22793 | 25207 | 22.786 | 22.800 | 25.199 | 25.215 |
| 10.00% | 1000000 | 999732 | 1000268 | 21594 | 26408 | 21.587 | 21.601 | 26.400 | 26.416 |
| | | | | | | | | | |
| 20.00% | 1000000 | 999732 | 1000268 | 19194 | 28808 | 19.188 | 19.200 | 28.799 | 28.817 |
| 30.00% | 1000000 | 999732 | 1000268 | 16795 | 31209 | 16.790 | 16.801 | 31.200 | 31.218 |
| 40.00% | 1000000 | 999732 | 1000268 | 14396 | 33610 | 14.391 | 14.401 | 33.600 | 33.620 |
| 50.00% | 1000000 | 999732 | 1000268 | 11996 | 36010 | 11.992 | 12.000 | 35.999 | 36.021 |
| 60.00% | 1000000 | 999732 | 1000268 | 9597 | 38411 | 9.593 | 9.601 | 38.400 | 38.422 |
| 70.00% | 1000000 | 999732 | 1000268 | 7198 | 40811 | 7.195 | 7.201 | 40.799 | 40.823 |

| OSC TRIM Values | | Gain Error 12 % | |
|------------------|-----------|--------------------|--|
| 24 MHz @ Clock | | Trimmed Step Sizes | |
| Min Step | 0.000 MHz | 0.0132 MHz | |
| Typ Step | 0.015 | 0.0150 MHz | |
| Max Step | 0.000 MHz | 0.0188 MHz | |
| Linearity Error: | | 0.75 LSB | |

Post-Tune Error

| Ideal | | | | | | | Ideal | | | | | | | | |
|------------|---------|------------|-------------------|-------|---------|------|------------|---------|------------|---------|------|-------|--------------|--|--|
| TuneAmount | | TuneCounts | Post - MIN Tuning | | | | TuneCounts | | MAX Tuning | | | | Max Error... | | |
| AveMin | AveMax | MIN | Typ-Min | % | Typ-Max | % | MAX | Typ-Min | % | Typ-Max | % | MIN | MAX | | |
| 0.007 | -0.007 | 0 | 23.976 | -0.1% | 24.013 | 0.1% | 0 | 23.987 | -0.1% | 24.024 | 0.1% | 0.10% | 0.10% | | |
| 0.031 | -0.031 | 2 | 23.978 | -0.1% | 24.023 | 0.1% | -2 | 23.977 | -0.1% | 24.022 | 0.1% | 0.09% | 0.09% | | |
| 0.055 | -0.055 | 4 | 23.980 | -0.1% | 24.032 | 0.1% | -4 | 23.988 | -0.1% | 24.020 | 0.1% | 0.13% | 0.13% | | |
| 0.103 | -0.103 | 7 | 23.972 | -0.1% | 24.035 | 0.1% | -7 | 23.965 | -0.1% | 24.028 | 0.1% | 0.14% | 0.14% | | |
| 0.151 | -0.151 | 10 | 23.964 | -0.2% | 24.037 | 0.2% | -10 | 23.963 | -0.2% | 24.036 | 0.2% | 0.15% | 0.15% | | |
| 0.199 | -0.199 | 13 | 23.955 | -0.2% | 24.039 | 0.2% | -13 | 23.961 | -0.2% | 24.045 | 0.2% | 0.19% | 0.19% | | |
| | | | | | | | | | | | | | | | |
| 0.247 | -0.247 | 16 | 23.947 | -0.2% | 24.042 | 0.2% | -16 | 23.958 | -0.2% | 24.053 | 0.2% | 0.22% | 0.22% | | |
| 0.487 | -0.487 | 32 | 23.918 | -0.3% | 24.071 | 0.3% | -32 | 23.929 | -0.3% | 24.082 | 0.3% | 0.34% | 0.34% | | |
| 0.727 | -0.727 | 48 | 23.889 | -0.5% | 24.099 | 0.4% | -48 | 23.900 | -0.4% | 24.111 | 0.5% | 0.46% | 0.46% | | |
| 0.967 | -0.967 | 64 | 23.861 | -0.6% | 24.128 | 0.5% | -64 | 23.872 | -0.5% | 24.140 | 0.6% | 0.58% | 0.58% | | |
| 1.207 | -1.207 | 80 | 23.832 | -0.7% | 24.157 | 0.7% | -80 | 23.843 | -0.7% | 24.169 | 0.7% | 0.70% | 0.70% | | |
| 2.406 | -2.406 | 160 | 23.689 | -1.3% | 24.301 | 1.3% | -161 | 23.683 | -1.3% | 24.301 | 1.3% | 1.29% | 1.32% | | |
| | | | | | | | | | | | | | | | |
| 4.806 | -4.808 | 320 | 23.402 | -2.5% | 24.589 | 2.5% | -321 | 23.394 | -2.5% | 24.589 | 2.5% | 2.49% | 2.53% | | |
| 7.205 | -7.209 | 480 | 23.116 | -3.7% | 24.877 | 3.7% | -481 | 23.106 | -3.7% | 24.879 | 3.7% | 3.68% | 3.72% | | |
| 9.604 | -9.610 | 640 | 22.829 | -4.9% | 25.165 | 4.9% | -641 | 22.819 | -4.9% | 25.169 | 4.9% | 4.88% | 4.92% | | |
| 12.004 | -12.010 | 800 | 22.542 | -6.1% | 25.453 | 6.1% | -801 | 22.530 | -6.1% | 25.457 | 6.1% | 6.08% | 6.13% | | |
| 14.403 | -14.411 | 960 | 22.256 | -7.3% | 25.741 | 7.3% | -961 | 22.242 | -7.3% | 25.747 | 7.3% | 7.27% | 7.32% | | |
| 16.802 | -16.811 | 1120 | 21.969 | -8.5% | 26.030 | 8.5% | -1121 | 21.954 | -8.5% | 26.036 | 8.5% | 8.46% | 8.53% | | |

FIG. 5